

Customer No.: 31561
Application No.: 10/707,609
Docket NO.: 10073-US-PA

REMARKS

Present Status of Application

The Office Action dated May 03, 2005, objected claims 1-7 and 15-16 for informalities. Claims 1-2, 5-7, 15-16 were rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-7 of US Patent No. 6,825,568, filed September 01, 2003, entitled "Flip Chip Package Structure And Flip Chip Device with Area Bump". Claims 1-6 were rejected under 35 USC§102(e) as being anticipated by Hsu et al. (US Patent No. 6,774,498). Claims 1-3, 5-6 and 15 were rejected under 35 USC§102(b) as being anticipated by Andrews (US Patent No. 5,352,926). Claim 16 was rejected under 35 USC§103(a) as being unpatentable over Andrews.

Claim 1 has been amended by incorporating limitations of claim 7, while claim 7 has been cancelled. No new matter has been added to the application by the amendments made to the specification, claims and drawings. This Amendment is promptly filed to place the above-captioned case in condition for allowance. After entering the amendments and considering the following discussions, a notice of allowance is respectfully solicited.

Discussion for the objections

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Claims 1-7 and 15-16 were objected for having illegibility of the claim amendment pages when faxed to the Office.

In response to this objection, the Applicant respectfully points out that the amendments of the claims filed on March 03, 2005 were faxed to the Office in a legible and clean copy. However, for the convenience of examination, a good copy of this amendment of the claims for this application along with the previous amendments filed on March 03, 2005 and filed on November 09, 2004 will be sent to the Office via air mails for your examination.

Withdrawal of these objections is respectfully requested.

Discussion of double patenting rejections

Claims 1-2, 5-7 and 15-16 were rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-7 of US Patent No. 6,825,568, filed September 01, 2003, entitled "Flip Chip Package Structure And Flip Chip Device with Area Bump".

Applicant believes that the claimed invention recited in claims 1-2, 5-7 and 15-16 can distinguish over the issued U.S. Patent No. 6,825,568, even though it may have some similar features in overlapping. In order to avoid the potential double patenting in the claimed invention, a terminal disclaimer is submitted.

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As a result, reconsideration and withdrawal of these rejections are respectfully requested.

Discussion for 35 USC§102 and 103 rejections

Claims 1-6 were rejected under 35 USC§102(e) as being anticipated by Hsu et al. (US Patent No. 6,774,498). Claims 1-3, 5-6 and 15 were rejected under 35 USC§102(b) as being anticipated by Andrews (US Patent No. 5,352,926). Claim 16 was rejected under 35 USC§103(a) as being unpatentable over Andrews.

Applicants would like to thank the examiner for pointing out that claim 7 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims in the Office Action dated December 09, 2004.

Claim 1 has been amended by incorporating limitations of claim 7 for providing more descriptions according to this invention, while claim 7 has been cancelled.

Applicants submit that the amended claim 1 patently defines over the prior references for at least the reason that “the cited art at least fails to disclose or fairly suggest either in single or in combination a flip chip package structure having a filler material disposed between the chip and the substrate and encapsulating the first bumps and the second bumps”, as pointed out by the Office Action dated December 09, 2004.

The amended claim 1 recites:

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1. A flip chip package structure, comprising:
a chip having a first bump-positioning region;
a substrate having a second bump-positioning region, at least a first hole and a plurality of second holes, wherein the first hole and the second holes are located within the second bump-positioning region, and the first hole has a depth greater than the second holes;
at least a first bump arranged between the first bump-positioning region of the chip and the second bump-positioning region of the substrate, wherein the first bump and the substrate are bonded together via the first hole;
a plurality of second bumps arranged between the first bump-positioning region of the chip and the second bump-positioning region of the substrate, wherein the second bumps and the substrate are bonded together via the second holes; and
a filler material disposed between the chip and the substrate and encapsulating the first bumps and the second bumps;
wherein the first bump has a volume larger than a volume of the second bump.

Accordingly, the structure of the present invention is patentably distinct from the prior art reference Hsu or Andrews because none of the references either alone or in combination discloses all limitations of amended claim 1.

Consequently, reconsideration and withdrawal of these 102 rejections are respectfully requested.

Claim 16 depends on independent claim 1.

Accordingly, it is respectfully submitted that claim 16 patentably distinguishes over the cited reference Andrews, either alone or in combination, for at least the reasons stated above as well as for the additional features that this claim recites.

Withdrawal of this rejections under 35 USC 103(a) is respectfully requested.

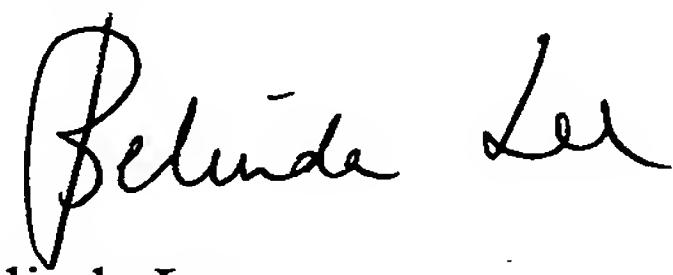
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CONCLUSION

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Belinda Lee

Belinda Lee

Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email: belinda@jcipgroup.com.tw
Usa@jcipgroup.com.tw